

ABSTRACT

A coronary bypass system incorporating a minimized extracorporeal blood circulation module is disclosed. In one embodiment, the extracorporeal blood circulation module comprises a rigid support plane for carrying the blood-handling components of the system, including an blood pump, an oxygenator, a filter, a venous blood reservoir, and a sampling manifold. The extracorporeal blood circulation module is pre-configured to interconnect all of the blood-handling modules, such that total interconnective tubing length is minimized and interfacing with an overall heart-lung bypass console can be accomplished with maximum efficiency. In one embodiment, the venous blood reservoir is of the soft-shell variety mounted over a raised platform defined in the front surface of the support plane. The raised platform further defines a indentation on the front surface of the support plane. A rigid plate of the venous blood reservoir cooperates with the front surface of the support plane over the indentation to define a vacuum chamber surrounding a flexible membrane of the reservoir. A vacuum port extending into the vacuum chamber defined by the support plane and the reservoir plate is adapted to be coupled to a vacuum source, such that a regulated negative pressure can applied to the flexible reservoir membrane, thereby allowing for vacuum-assisted venous drainage.